FreeRATE
User Manual

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0.8	Draft	2014/04/24	J. Kirsch	Updated screenshots; added explanations on the Time per Jurisdiction report, generating invoices, and the rates of information calls.
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1 Introduction

FreeRATE is a service that DTH Software provides to telecommunications providers who cannot justify implementation of a fully automated billing system. This free tool, available at freerate.org, lets users rate and invoice Call Detail Records (CDRs).

1.1 Summary

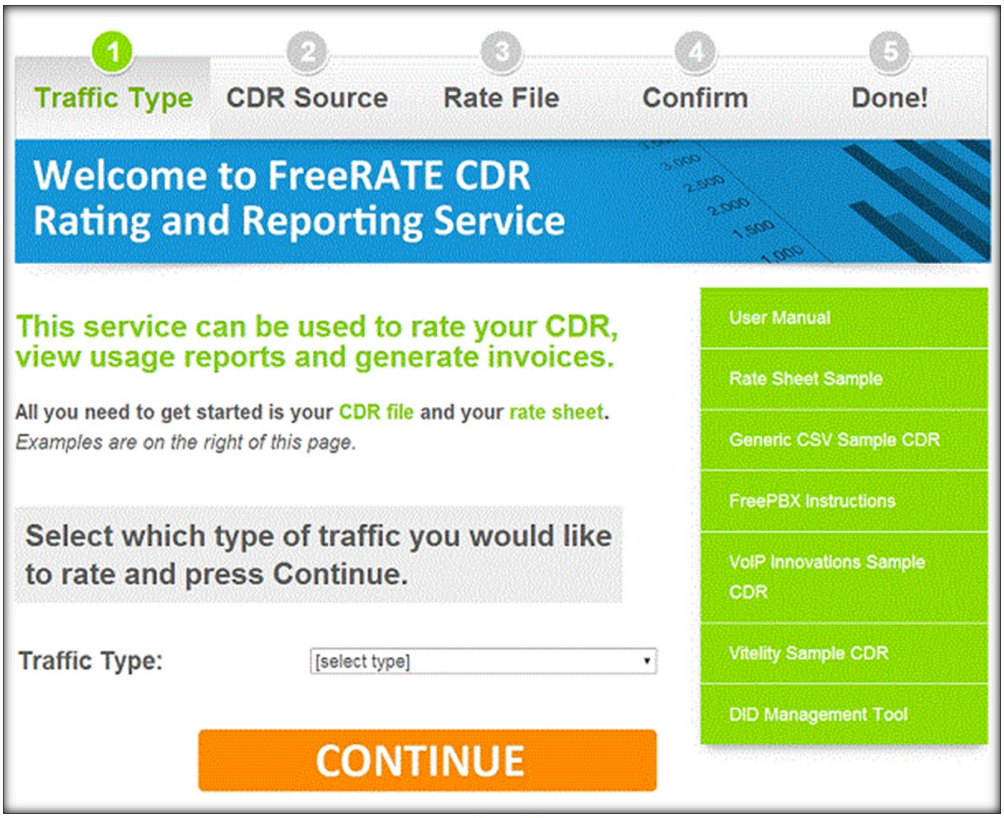
This document is geared toward telecommunications providers. It describes how to use FreeRATE for the following tasks:

- Selecting traffic types
- Loading CDRs and rate sheets
- Rating calls
- Viewing rating reports
- Generating invoices
- Accessing sample CDRs and rate sheets
- Exporting CDRs from FreePBX™ for use in FreeRATE
- Configuring FreeSWITCH to produce generic CSV files for use in FreeRATE

2 Rating CDRs

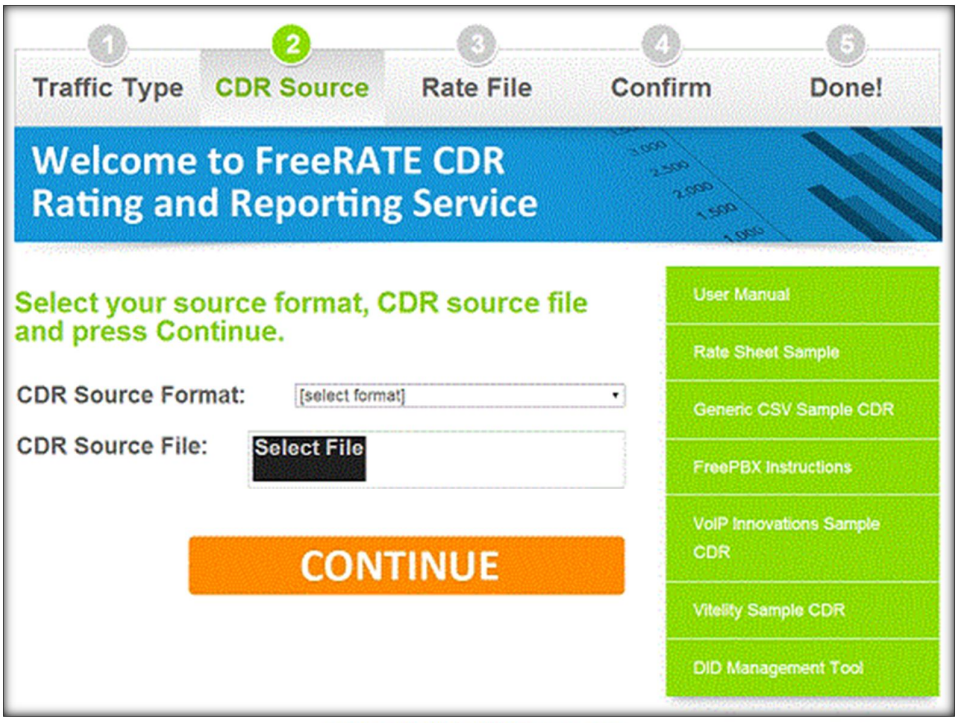
The process of rating CDRs, or determining how much to charge customers for calls, involves a few simple steps:

1. Go to freerate.org. You will see the Traffic Type page, as shown in figure 2-1.


1 Traffic Type
2 CDR Source
3 Rate File
4 Confirm
5 Done!
Welcome to FreeRATE CDR Rating and Reporting Service
This service can be used to rate your CDR, view usage reports and generate invoices.
All you need to get started is your CDR file and your rate sheet.
Examples are on the right of this page.
Select which type of traffic you would like to rate and press Continue.
Traffic Type:
[select type]
CONTINUE
User Manual
Rate Sheet Sample
Generic CSV Sample CDR
FreePBX Instructions
VoIP Innovations Sample CDR
Vitelity Sample CDR
DID Management Tool

2-1 FreeRATE's Traffic Type page

2. In the Traffic Type drop-down list, select the type of traffic you would like to rate. Currently FreeRATE only supports Termination traffic, since 98% of CDRs rated are outgoing calls. If you need a type that is not available, select Other in the drop-down list, then follow the link to DTH's support department and provide feedback on what type you need. DTH values your input. As more types become available, your needs will be incorporated into development plans.
3. Press the Continue button. The CDR Source page will appear, as shown in figure 2-2.



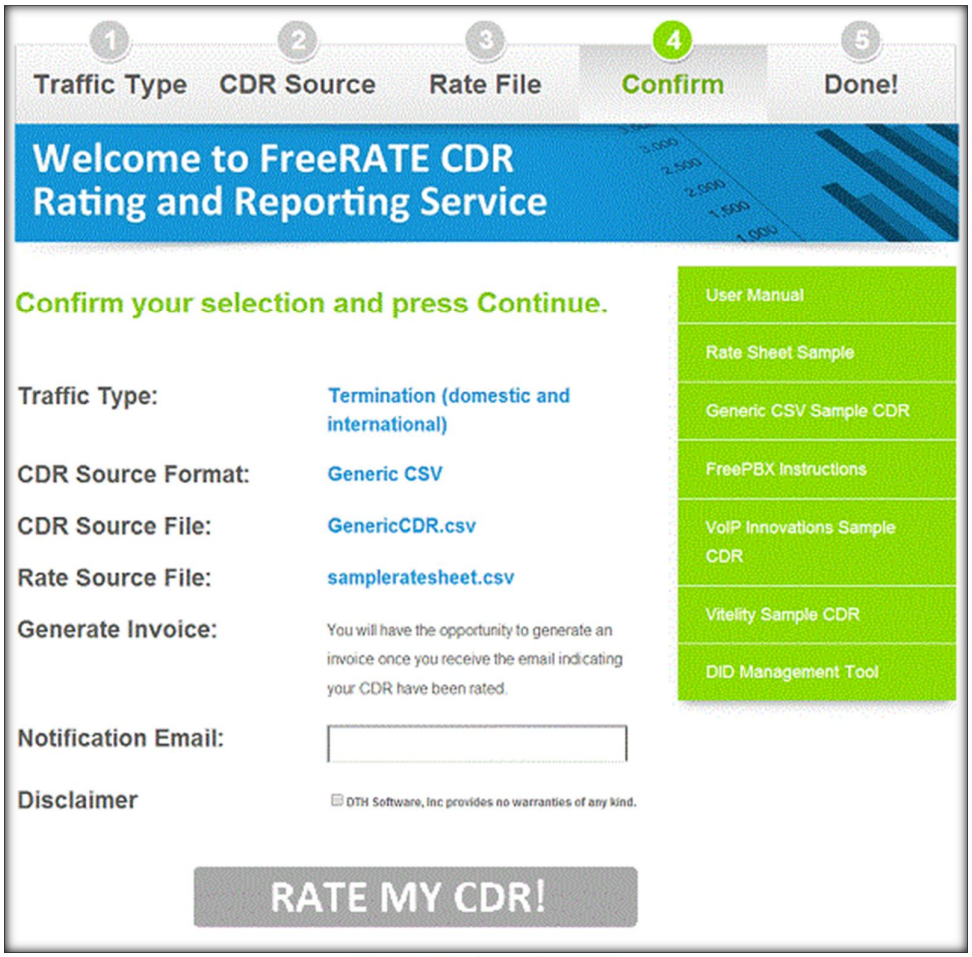
2-2 FreeRATE's CDR Source page

4. In the CDR Source Format drop-down list, select a format from one of the following:
   - **Generic CSV**: the most commonly used format, which lists information on calls as comma separated entries
   - **FreePBX™**: a custom format used by FreePBX™
   - **Vitelity**: a custom format used by a specific carrier
   - **VoIP Innovations**: a custom format used by a specific carrier

   If you need a format that is not available, select Other in the drop-down list, then follow the link to DTH's support department and provide input on what format you need. DTH is constantly expanding this list based on customer feedback.
5. Click Select File and choose a CDR source file. See section 5 for detailed information on CDR files.
6. Press the blue Upload button. FreeRATE will upload your file.
7. Press the Continue button. You will see the Rate File page, as shown in figure 2-3.

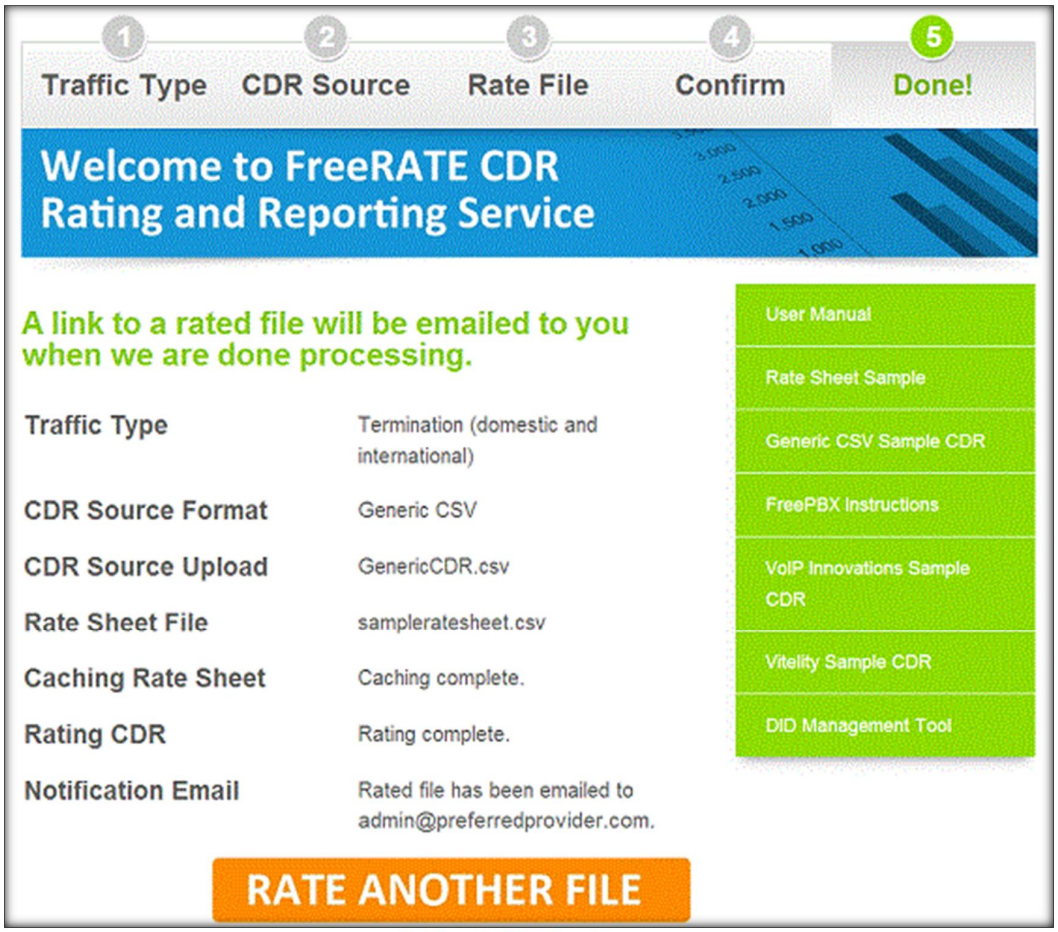
2-3 FreeRATE's Rate File page

8. Click Select File and choose a rate source file. To use FreeRATE's sample rate sheet, first click on the Example Rate Sheet link and download the sample file. See section 5 for more information on samples and file formats.
9. Press the blue Upload button. FreeRATE will upload your file.
10. In the Information field, enter the dollar amount to use when rating calls made to information services.
11. Press the Continue button. The Confirm page will appear, as shown in figure 2-4.



2-4 FreeRATE's Confirm page

12. Look over your selection of traffic type, format, and source files. To edit a selection, click on its link. FreeRATE will take you to the corresponding page, where you can modify the input.
13. Back on the Confirm page, enter your email in the Notification Email Address field. FreeRATE will send the results of the rating to this address.
14. Check the disclaimer.
15. Press the Rate My CDR! button. The DONE! page will appear, as shown in figure 2-5.



2-5 FreeRATE's Done! page

FreeRATE will rate the CDRs you uploaded. The process can take from a few seconds to a few minutes to run, depending on the size of the files uploaded. A CDR file with 100,000 records typically runs for a few minutes.

Once the process is complete, FreeRATE will mail a report to the address you specified. Press the Rate Another File button to return to the Traffic Type page and begin the process of rating another file. Alternatively, see section 3 for information on viewing the rating results.

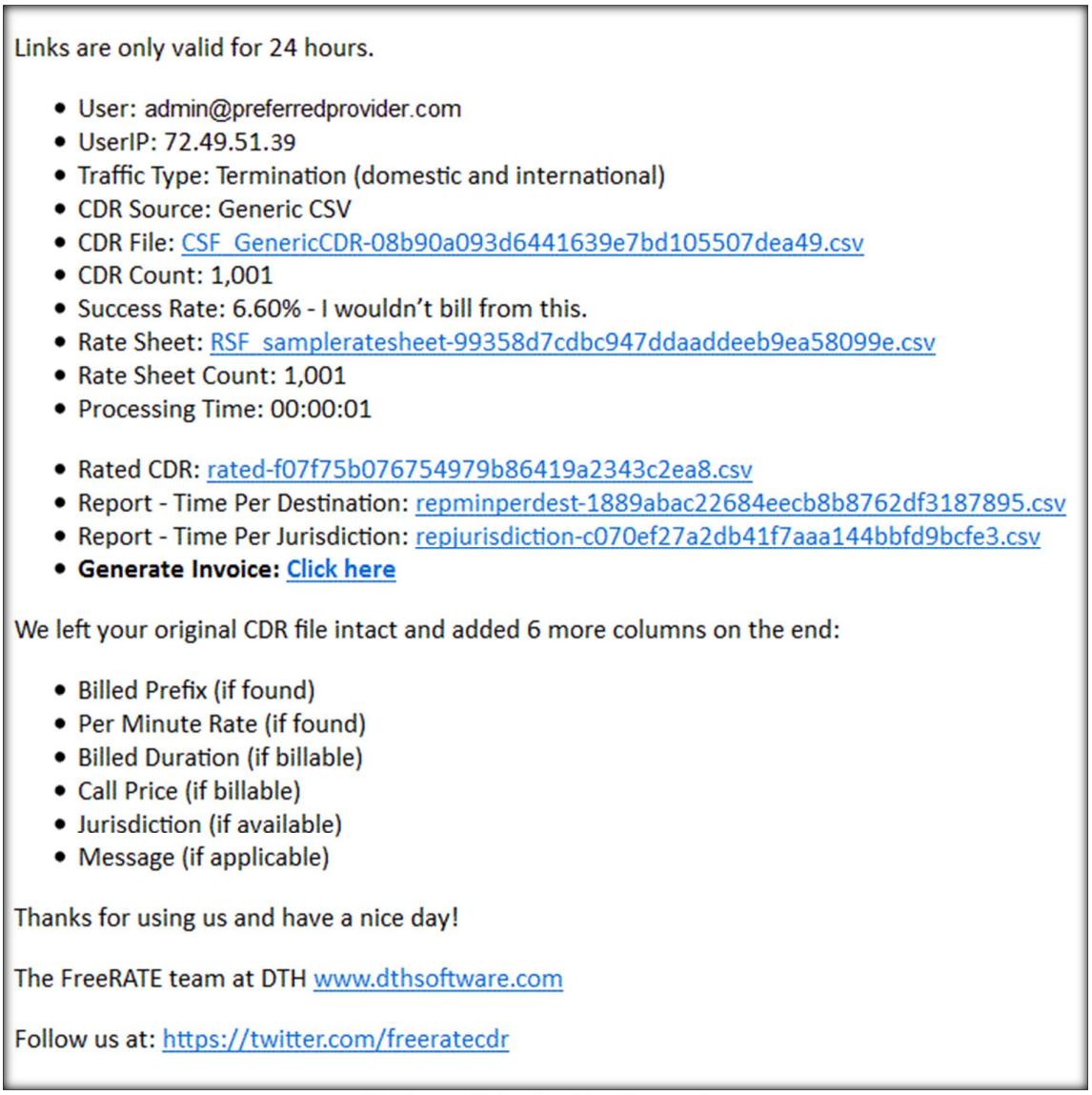
3 Viewing Rating Data

Once you have rated your CDRs, as explained in section 2, you can view a summary of the rating process, the results of the rating, and related reports.

3.1 Accessing Rating Data

Follow these steps to access the rating data:

1. Check the email account you entered on FreeRATE's Confirm page.
2. Locate a message from FCR with the subject "FreeRATE CDR Rating Report," illustrated in figure 3-1.



Links are only valid for 24 hours.

- User: admin@preferredprovider.com
- UserIP: 72.49.51.39
- Traffic Type: Termination (domestic and international)
- CDR Source: Generic CSV
- CDR File: CSF_GenericCDR-08b90a093d6441639e7bd105507dea49.csv
- CDR Count: 1,001
- Success Rate: 6.60% - I wouldn't bill from this.
- Rate Sheet: RSF_sampleratesheet-99358d7cdbc947ddaaddeeb9ea58099e.csv
- Rate Sheet Count: 1,001
- Processing Time: 00:00:01

- Rated CDR: rated-f07f75b076754979b86419a2343c2ea8.csv
- Report - Time Per Destination: repminperdest-1889abac22684eecb8b8762df3187895.csv
- Report - Time Per Jurisdiction: repjurisdiction-c070ef27a2db41f7aaa144bbfd9bcfe3.csv
- **Generate Invoice:** Click here

We left your original CDR file intact and added 6 more columns on the end:

- Billed Prefix (if found)
- Per Minute Rate (if found)
- Billed Duration (if billable)
- Call Price (if billable)
- Jurisdiction (if available)
- Message (if applicable)

Thanks for using us and have a nice day!

The FreeRATE team at DTH www.dthsoftware.com

Follow us at: https://twitter.com/freeratecdr

3-1 The email showing the rating results

3.2 Viewing the Rating Summary

The top of the rating data email provides the following information summarizing the rating process:

- **User**: the email address you provided on the Confirm page
- **User IP**: the IP address you accessed FreeRATE from

- **Traffic Type**: the traffic type you selected, such as Termination
- **CDR Source**: the format you selected for the CDR source file
- **CDR File**: a link to the file listing the CDRs rated. FreeRATE stores this file for 24 hours.
- **CDR Count**: the number of CDRs rated
- **Success Rate**: the percentage of calls FreeRATE assigned a cost to. This figure should be as close to 100% as possible. Failures occur when needed information is missing from the rate sheet. This line also includes a recommendation, as detailed in the following table:

Success Rate Range	Recommendation
100	Perfect!
95.00 – 99.99	Probably good enough to bill from. Your call.
90.00 – 94.99	Iffy to bill from.
0.01 – 89.99	I wouldn't bill from this.
0	Probably a problem with the rate sheet.

- **Rate Sheet**: a link to your rate sheet. FreeRATE stores this file for 24 hours.
- **Rate Sheet Count**: the number of rates listed in your rate sheet
- **Processing Time**: the length of time the rating process ran, in HH:MM:SS format

3.3 Viewing the Rating Results

Toward the middle of the rating data email, you will find several links. The top one, labeled Rated CDR, leads to the rating results, illustrated in figure 3-2. FreeRATE stores this file for 24 hours. In addition to the data given in the CDR file, the report also lists the following information for each CDR rated:

- **Billed Prefix**: the destination number of the CDR. This number matches an entry in the rate sheet and consists of a country code followed by an NPA or NPANXX.
- **Per Minute Rate**: the amount charged per minute for calls to the CDR's destination, in dollars. It consists of up to seven decimal digits. To determine the call's cost, FreeRATE multiplies this number by the rounded duration of the call.
- **Billed Duration**: the amount of time used in calculating the cost of the call, in seconds. With per minute billing, this amount is the length of the call rounded up to the nearest multiple of 60. A call lasting 73 seconds would have a billed duration of 120 seconds. For destinations using staggered durations, this amount equals the call length rounded up to the CDR's minimum interval or to the nearest multiple of the billing increment. A call lasting 37 seconds with a minimum interval of 30 seconds and increments of 6 seconds would have a billed duration of 42 seconds.
- **Call Price**: the price assigned to the call, in dollars. This figure equals the product of the per minute rate and the billed duration divided by 60.
- **Jurisdiction**: the type of the call, such as interstate, intrastate, local, long distance, information, emergency, etc.
- **Message**: the status of the rating. This field either indicates success or lists the error that occurred.

	A	B	C	D	E	F	G	H	I	J	K	L
1	CallID	OriginatingNumber	DestinationNumber	LRN	StartTime	Duration	BilledPrefix	PerMinuteRate	BilledDuration	CallPrice	Jurisdiction	Message
2	11240741	9182001234	8883691234		06/06/13 09:06 AM	17	N/A	0	0	0	Toll-free Termination	No rate match found for +18883691234.
3	11240740	2085231234	9169951234		06/06/13 09:05 AM	29	N/A	0	0	0	Interstate	No rate match found for +19169951234.
4	11240735	8163411234	2085241234		06/06/13 09:05 AM	11	N/A	0	0	0	Interstate	No rate match found for +12085241234.
5	11240730	6318201234	8002081234		06/06/13 09:05 AM	50	N/A	0	0	0	Toll-free Termination	No rate match found for +18002081234.
6	11240728	5146641234	3472641234		06/06/13 09:05 AM	59	N/A	0	0	0	Interstate	No rate match found for +13472641234.
7	11240725	6474761234	4076701234		06/06/13 09:05 AM	11	1407	0.12	30	0.06	Interstate	Rated Successfully.
8	11240720	2085231234	2086561234		06/06/13 09:05 AM	3	N/A	0	0	0	Intrastate	No rate match found for +12086561234.
9	11240717	2085231234	2082371234		06/06/13 09:05 AM	73	N/A	0	0	0	Intrastate	No rate match found for +12082371234.
10	11240716	5146641234	3472641234		06/06/13 09:04 AM	4	N/A	0	0	0	Interstate	No rate match found for +13472641234.
11	11240703	4057891234	4055951234		06/06/13 09:04 AM	77	N/A	0	0	0	Intrastate	No rate match found for +14055951234.
12	11240698	6087821234	6087831234		06/06/13 09:04 AM	11	N/A	0	0	0	Intrastate	No rate match found for +16087831234.
13	11240697	8883251234	9729061234		06/06/13 09:03 AM	132	N/A	0	0	0	Interstate	No rate match found for +19729061234.
14	11240695	2085231234	2089321234		06/06/13 09:03 AM	3	N/A	0	0	0	Intrastate	No rate match found for +12089321234.
15	11240694	9182581234	9184931234		06/06/13 09:03 AM	43	N/A	0	0	0	Intrastate	No rate match found for +19184931234.
16	11240693	6474761234	4074091234		06/06/13 09:03 AM	64	1407	0.12	66	0.14	Interstate	Rated Successfully.
17	11240686	6087821234	6087831234		06/06/13 09:03 AM	19	N/A	0	0	0	Intrastate	No rate match found for +16087831234.
18	11240683	7046311234	8288591234		06/06/13 09:03 AM	98	N/A	0	0	0	Intrastate	No rate match found for +18288591234.
19	11240682	8162381234	2085241234		06/06/13 09:03 AM	43	N/A	0	0	0	Interstate	No rate match found for +12085241234.
20	11240678	3023171234	3176601234		06/06/13 09:03 AM	10	N/A	0	0	0	Interstate	No rate match found for +13176601234.
21	11240676	5089481234	9786831234		06/06/13 09:03 AM	53	N/A	0	0	0	Intrastate	No rate match found for +19786831234.

3-2 The FreeRATE results file

3.4 Viewing Rating Reports

Just below the rating results in the rating data email, you will find links to several reports.

3.4.1 Time per Destination Report

The Time per Destination Report lists the duration of calls made to each destination, as illustrated in figure 3-3. FreeRATE stores this file for 24 hours. For each CDR rated, this report provides the following information:

- **Billed Prefix**: the destination number of the CDR. This number matches an entry in the rate sheet and consists of a country code followed by an NPA or NPANXX.
- **Raw Duration**: the length of the call to the given destination, in seconds.
- **Billed Duration**: the amount of time used in calculating the cost of the call, in seconds. With per minute billing, this amount is the length of the call rounded up to the nearest multiple of 60. A call lasting 73 seconds would have a billed duration of 120 seconds. For destinations using staggered durations, this amount equals the call length rounded up to the CDR's minimum interval or to the nearest multiple of the billing increment. A call lasting 37 seconds with a minimum interval of 30 seconds and increments of 6 seconds would have a billed duration of 42 seconds.
- **Jurisdiction**: the type of the call, such as interstate, intrastate, local, long distance, information, emergency, etc.

BilledPrefix	RawDuration	BilledDuration	Jurisdiction
1407	11	30	Interstate
1407	64	66	Interstate
1905	41	42	Intrastate
1407	5	30	Interstate
1416	61	66	Intrastate
1343	148	150	Intrastate
1905	126	126	Intrastate
1905	24	30	Intrastate

3-3 A sample Time per Destination report

3.4.2 Time per Jurisdiction Report

The Time per Jurisdiction Report summarizes data on calls made to each type of jurisdiction, as illustrated in figure 3-4. FreeRATE stores this file for 24 hours. For each jurisdiction rated, this report provides the following information:

- **Jurisdiction**: the type of the call, such as interstate, intrastate, local, long distance, information, emergency, etc.
- **Billed Duration**: the total number of seconds to be billed for calls made in the jurisdiction.

- **Call Price**: the total cost of all calls made in the jurisdiction, in dollars.

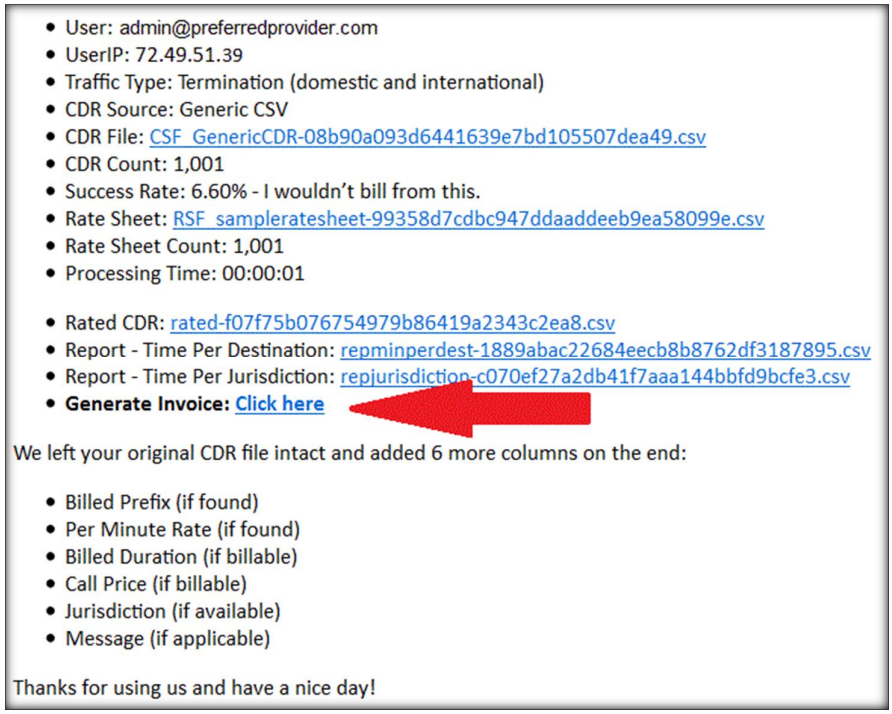
Jurisdiction	BilledDuration(seconds)	CallPrice
Interstate	9822	20.21
Intrastate	7494	15.42

3-4 A sample Time per Jurisdiction Report

4 Generating Invoices

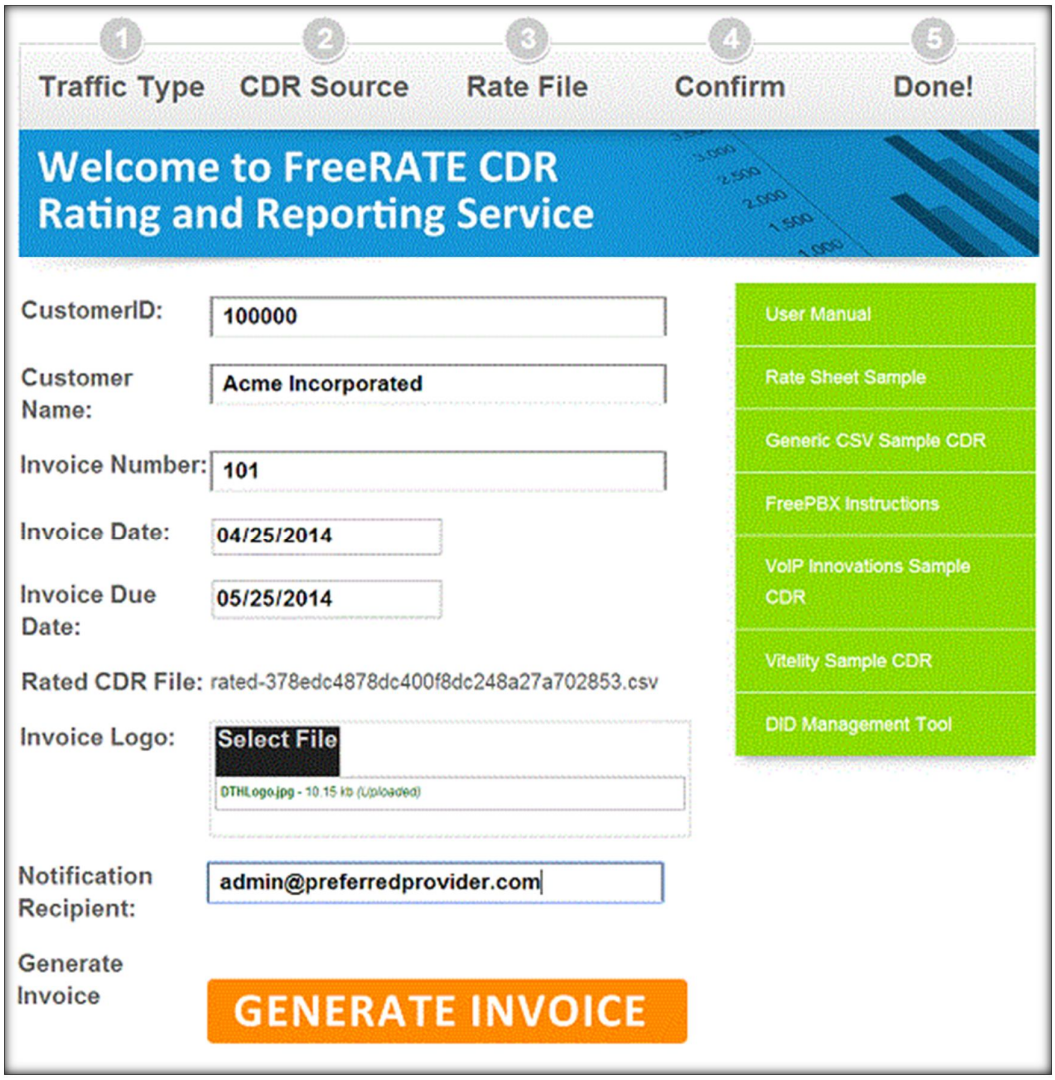
Once you have rated your CDRs, as explained in section 2, you can generate an invoice for the calls, then bill your customers. Follow these steps to set up an invoice:

1. Open the email with the rating results, as explained in section 3.1.
2. Locate the line toward the middle of the message labeled Generate Invoice, as shown in figure 4-1.


User: admin@preferredprovider.com
UserIP: 72.49.51.39
Traffic Type: Termination (domestic and international)
CDR Source: Generic CSV
CDR File: CSF_GenericCDR-08b90a093d6441639e7bd105507dea49.csv
CDR Count: 1,001
Success Rate: 6.60% - I wouldn't bill from this.
Rate Sheet: RSF_sampleratesheet-99358d7cdbc947ddaaddeeb9ea58099e.csv
Rate Sheet Count: 1,001
Processing Time: 00:00:01
Rated CDR: rated-f07f75b076754979b86419a2343c2ea8.csv
Report - Time Per Destination: repminperdest-1889abac22684eecb8b8762df3187895.csv
Report - Time Per Jurisdiction: repjurisdiction-c070ef27a2db41f7aaa144bbfd9bcfe3.csv
Generate Invoice: Click here
We left your original CDR file intact and added 6 more columns on the end:
Billed Prefix (if found)
Per Minute Rate (if found)
Billed Duration (if billable)
Call Price (if billable)
Jurisdiction (if available)
Message (if applicable)
Thanks for using us and have a nice day!

4-1 The link in the rating data email used to generate invoices

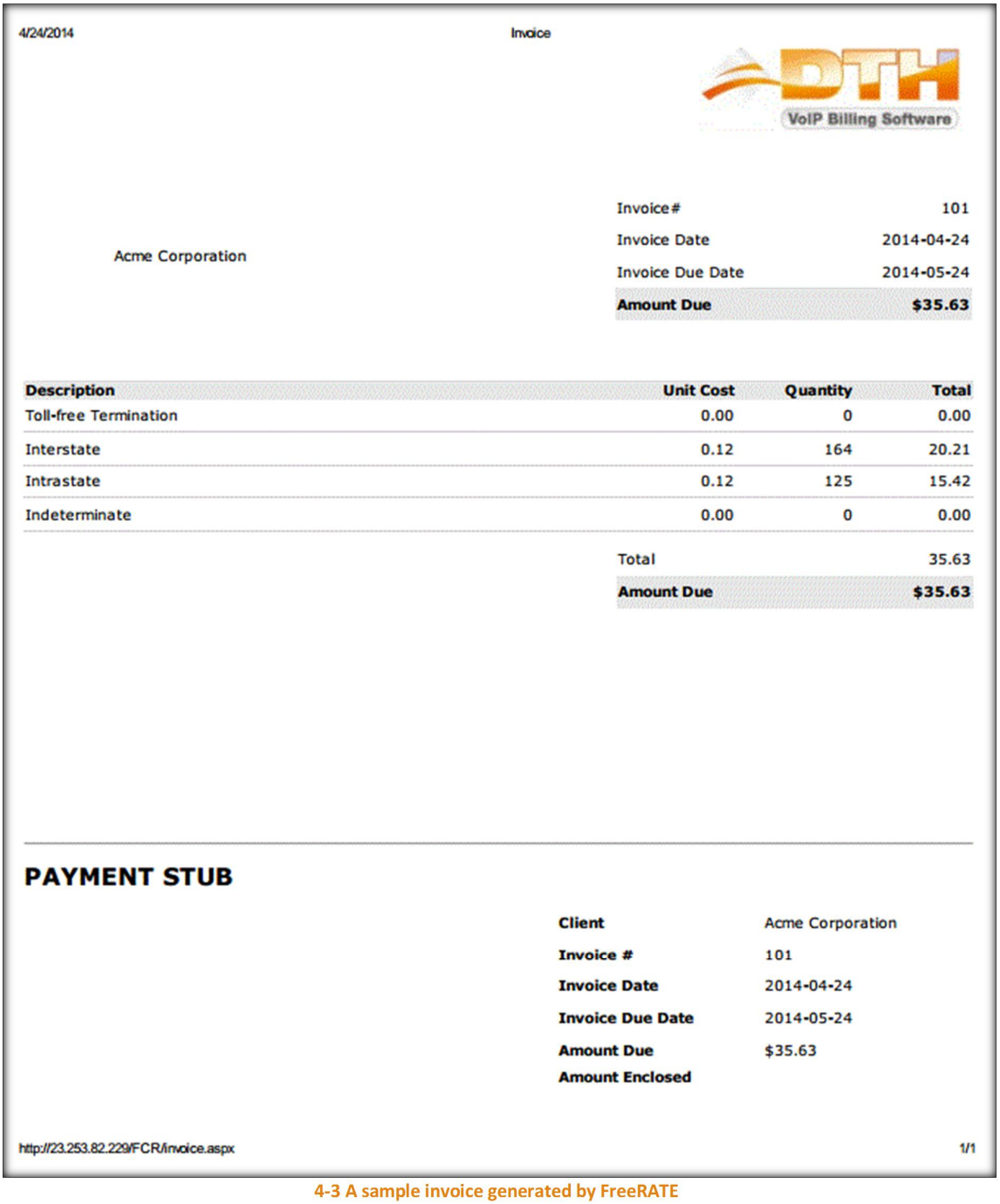
3. Click on the link in that line. It will open a web form used to generate invoices for rated calls, as shown in figure 4-2. FreeRATE makes this form available for 24 hours.



4-2 The web form used to generate invoices

4. Fill in the following fields in the form:
    - **Customer ID**: Enter a number uniquely identifying the customer to be invoiced. Note that this customer will be billed for all the calls that you rated. To bill multiple customers, rate each customer's calls separately.
    - **Customer Name**: Enter the name of the customer being invoiced.
    - **Invoice Number**: Enter the number of the invoice.
    - **Invoice Date**: In the calendar drop-down, select the date you plan to issue the invoice.
    - **Invoice Due Date**: In the calendar drop-down, select the date payment on the invoice is due.
    - **Invoice Logo**: Click in the Select File field, then select a JPEG file. FreeRATE will insert the image at the top of the invoice.
    - **Notification Recipient**: Enter an email address. Once the invoice is generated, a notification will be sent to this address.

5. Press the GENERATE INVOICE button. FreeRATE will generate an electronic invoice and display it, as shown in figure 4-3. You can print this file or save it as a PDF document, then deliver it to the customer.



4/24/2014 Invoice

DTH VoIP Billing Software

Acme Corporation

Invoice#	101
Invoice Date	2014-04-24
Invoice Due Date	2014-05-24
Amount Due	**$35.63**

Description	Unit Cost	Quantity	Total
Toll-free Termination	0.00	0	0.00
Interstate	0.12	164	20.21
Intrastate	0.12	125	15.42
Indeterminate	0.00	0	0.00

Total	35.63
Amount Due	**$35.63**

PAYMENT STUB

Client	Acme Corporation
Invoice #	101
Invoice Date	2014-04-24
Invoice Due Date	2014-05-24
Amount Due	$35.63
Amount Enclosed	

http://23.253.82.229/FCR/invoice.aspx 1/1

4-3 A sample invoice generated by FreeRATE

5 Understanding Source Files

While rating calls, FreeRATE uses two files: a CDR source and a rate sheet. This section discusses the data contained in these files and explains their formats. It also provides instructions for accessing sample versions of each.

5.1 CDR Source Files

CDR source files list information on who called whom and how long the call lasted.

5.1.1 Data in the CDR Source File

FreeRATE supports different formats of CDR files, including generic comma separated value (CSV) files and files customized for specific carriers, such as Vitelity and VoIP Innovations. A generic CDR source file contains six fields, as explained in the following table and illustrated in figure 5-1:

Field	Description	Example Value
Call ID	A unique number identifying the call. The output file also lists this number.	CDR12345
Originating Number	The source number of the call. Any NANP format is acceptable.	6138221234
Destination Number	The destination number of the call. Any NANP format is acceptable.	6138229999
LRN	A number that provides local number portability. Any NANP format is acceptable. This field is not required. If supplied, FreeRATE will rate the call using this number. If omitted, it will not be used in the rating.	6138220000
Start Time	The date and time the call was started. Only valid date/time formats are acceptable, such as YYYY-MM-DD HH:MM:SS.	2013-06-06 09:05:50
Duration	The length of the call in seconds.	69

CallID	OriginatingNumber	DestinationNumber	LRN	StartTime	Duration
11240741	9182001234	8883691234		06/06/13 09:06 AM	17
CDR40740	2085231234	9169951234		06/06/13 09:05 AM	29
11240735	8163411234	2085241234		06/06/13 09:05 AM	11
11240730	6318201234	8002081234		06/06/13 09:05 AM	50
CDR40728	5146641234	3472641234		06/06/13 09:05 AM	59
CDR40725	6474761234	4076701234		06/06/13 09:05 AM	11
11240720	2085231234	2086561234		06/06/13 09:05 AM	3
11240717	2085231234	2082371234		06/06/13 09:05 AM	73
CDR40716	5146641234	3472641234		06/06/13 09:04 AM	4
11240703	4057891234	4055951234		06/06/13 09:04 AM	77
CDR40698	6087821234	6087831234		06/06/13 09:04 AM	11
CDR40697	8883251234	9729061234		06/06/13 09:03 AM	132
11240695	2085231234	2089321234		06/06/13 09:03 AM	3
11240694	9182581234	9184931234		06/06/13 09:03 AM	43
11240693	6474761234	4074091234		06/06/13 09:03 AM	64

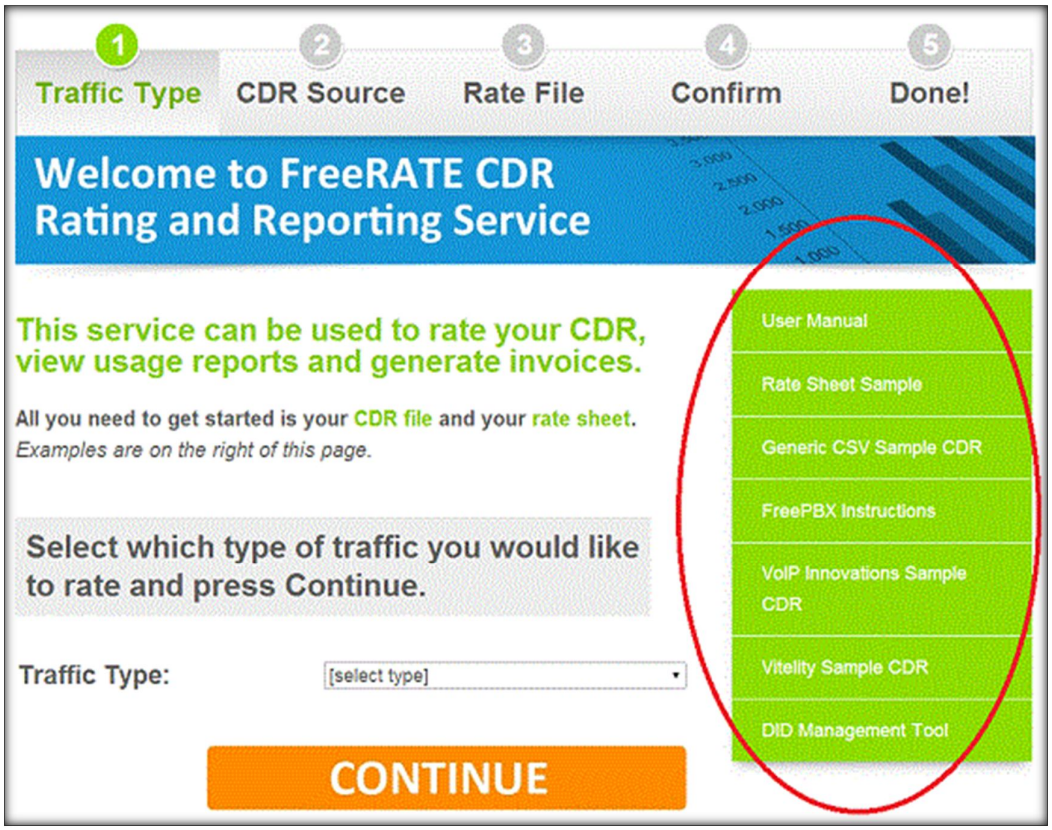
5-1 A generic format CDR source file

- In the source file, separate all values in a row by commas.
- List each row on a separate line.

5.1.2 Accessing Sample CDR Source Files

FreeRATE provides sample CDR source files. Follow these steps to download a sample file:

1. On any page of the FreeRATE site, locate the links on the right, as shown in figure 5-2.


1 Traffic Type
2 CDR Source
3 Rate File
4 Confirm
5 Done!
Welcome to FreeRATE CDR Rating and Reporting Service
This service can be used to rate your CDR, view usage reports and generate invoices.
All you need to get started is your CDR file and your rate sheet.
Examples are on the right of this page.
Select which type of traffic you would like to rate and press Continue.
Traffic Type:
[select type]
CONTINUE
User Manual
Rate Sheet Sample
Generic CSV Sample CDR
FreePBX Instructions
VoIP Innovations Sample CDR
Vitelity Sample CDR
DID Management Tool

5-2 Links provided on the FreeRATE site

2. Find the link for your preferred file format:
    - **Generic CSV**: Click on the Generic CSV Sample CDR link. FreeRATE will download the sample file to your computer, giving it the filename GenericCDR.csv.
    - **FreePBX™**: Click on the FreePBX Instructions link and consult the manual's FreePBX™ section for information on obtaining a CDR file.
    - **VoIP Innovations**: Click on the VoIP Innovations Sample CDR link and follow the instructions for accessing the sample file.
    - **Vitelity**: Click on the Vitelity Sample CDR link and follow the instructions for accessing the sample file.
3. Open the file in a text editor or a spreadsheet program to view or modify its data.

5.2 Rate Sheets

Rate sheets are essentially spreadsheets that tell how much to charge for calls made to given destinations.

5.2.1 Data in the Rate Sheet

A rate sheet contains five fields, as explained in the following table and illustrated in figure 5-3.

Field	Description	Example Value
Billed Prefix	The pattern FreeRATE matches on when searching for a CDR Destination Number or LRN. This number consists of the country code plus the NPA or NPANXX.	1613822
Per Minute Rate	The amount charged per minute for calls to the given destination, in dollars. It consists of up to seven decimal digits. To determine the call's cost, FreeRATE multiplies this number by the rounded duration of the call.	0.1234567
Destination Name	A free-form description of the destination name.	Little Rock - Arkansas
Minimum Interval	The minimum duration, in seconds, that the given destination will be billed for.	30
Remaining Interval	The interval, in seconds, that is applied to any time exceeding the minimum interval. If the Minimum Interval is 30 and the Remaining Interval is 6, all calls to the destination will	6

	be billed for a minimum of 30 seconds. For calls lasting longer than 30 seconds, any time above the initial 30 seconds will be billed in 6 second increments.	

BilledPrefix	PerMinuteRate	DestinationName	MinimumInterval	RemainingInterval
1407	0.12	Some City/State/Country	30	6
1204	0.12	Some City/State/Country	30	6
1226	0.12	Some City/State/Country	30	6
1226	0.12	Some City/State/Country	30	6
1249	0.12	Some City/State/Country	30	6
1249	0.12	Some City/State/Country	30	6
1250	0.12	Some City/State/Country	30	6
1250	0.12	Some City/State/Country	30	6
1289	0.12	Some City/State/Country	30	6
1289	0.12	Some City/State/Country	30	6
1306	0.12	Some City/State/Country	30	6
1306	0.12	Some City/State/Country	30	6
1343	0.12	Some City/State/Country	30	6

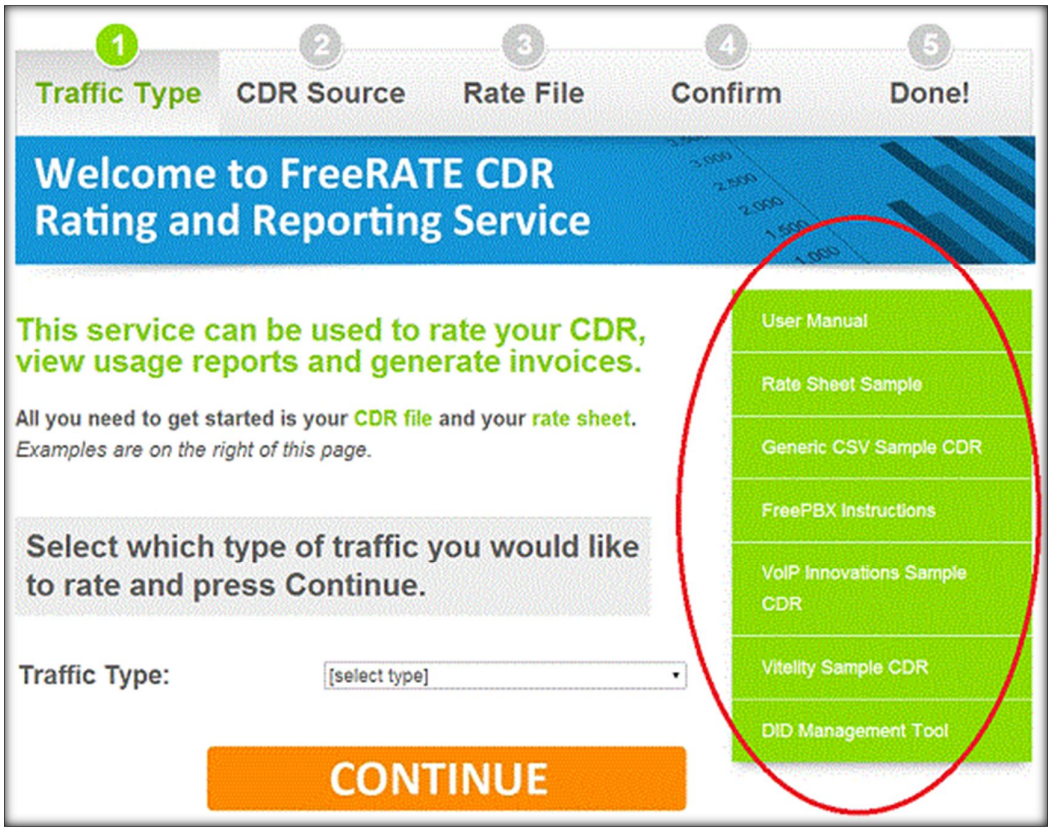
5-3 A sample rate sheet

- In the rate sheet, separate all values in a row by commas.
- List each row on a separate line.
- Include quotation marks around all fields.

5.2.2 Accessing Sample Rate Sheets

FreeRATE provides a sample rate sheet. There are two ways to access this file:

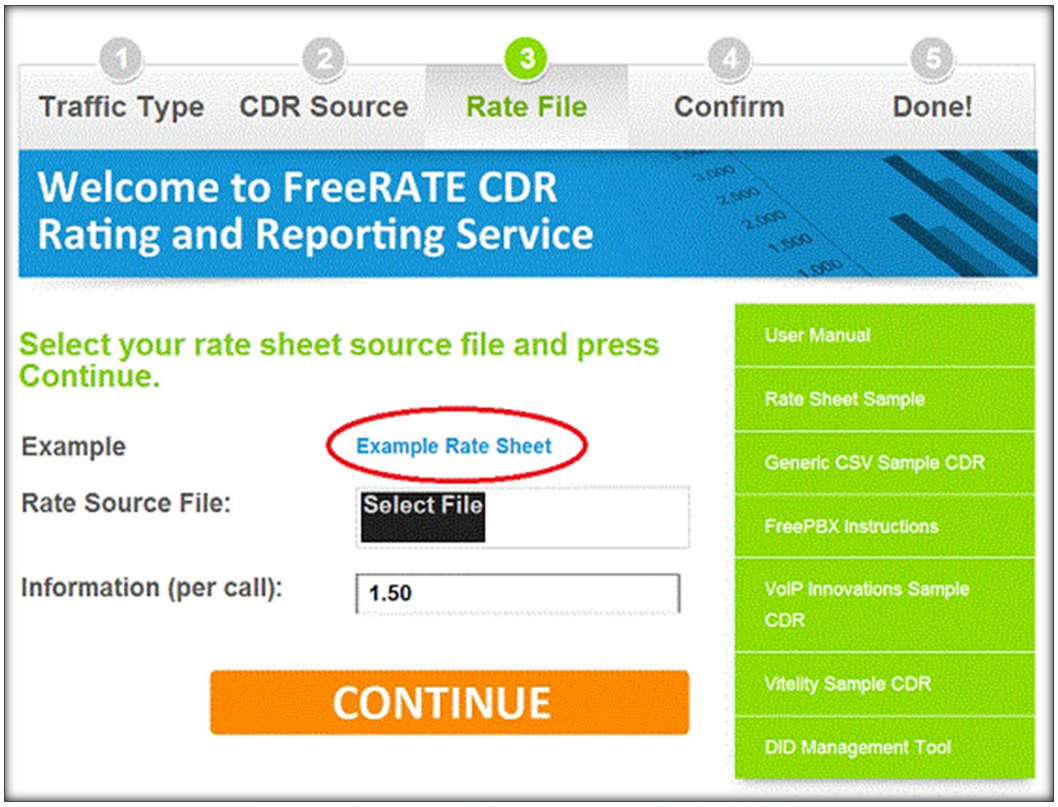
- Through the list of links:
  1. On any page of the FreeRATE site, locate the links on the right, as shown in figure 5-2.


1 Traffic Type
2 CDR Source
3 Rate File
4 Confirm
5 Done!
Welcome to FreeRATE CDR Rating and Reporting Service
This service can be used to rate your CDR, view usage reports and generate invoices.
All you need to get started is your CDR file and your rate sheet.
Examples are on the right of this page.
Select which type of traffic you would like to rate and press Continue.
Traffic Type:
[select type]
CONTINUE
User Manual
Rate Sheet Sample
Generic CSV Sample CDR
FreePBX Instructions
VoIP Innovations Sample CDR
Vitelity Sample CDR
DID Management Tool

5-4 Links provided on the FreeRATE site

2. Click on the Rate Sheet Sample link. FreeRATE will download the sample file to your computer, giving it the filename samperatesheet.csv.
3. Open the file in a text editor or a spreadsheet program to view or modify its data.

- Through the Rate File page:
  1. On the Rate File page, locate the link toward the left labeled Example Rate Sheet, as shown in figure 5-5.



5-5 The link on the Rate File page to the sample rate sheet

2. Click on the link. FreeRATE will download the sample file to your computer, giving it the filename samperatesheet.csv.
3. Open the file in a text editor or a spreadsheet program to view or modify its data.

6 Exporting CDRs from FreePBX™

FreePBX™, a registered trademark of Schmooze Com Inc., is a service that offers an open source private branch exchange (PBX). Since this telephone system records its call detail record (CDR) in a database, you can access this information then import it into FreeRATE, in order to rate calls and produce invoices.

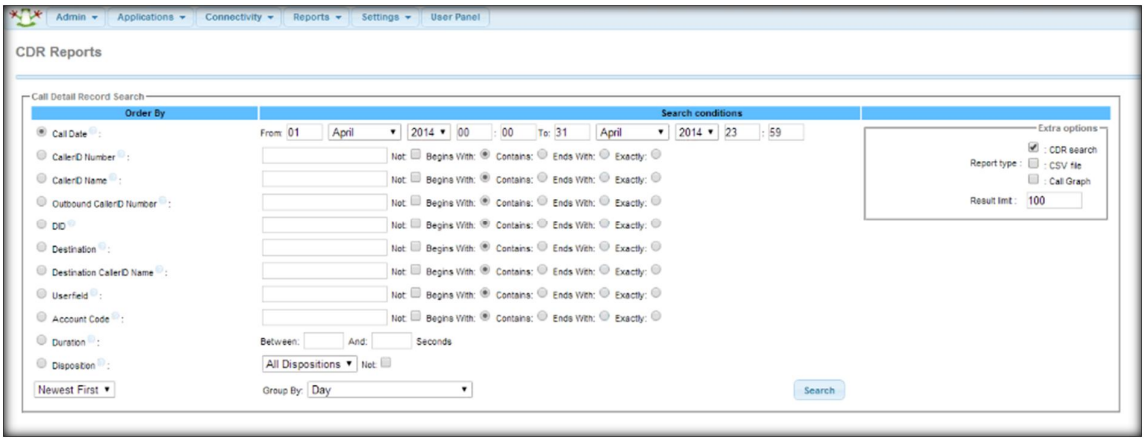
FreeRATE does not mediate forked CDRs. It is primarily intended to rate straight in and out calls.

In order to generate invoices for calls on your free PBX, you first need to export your CDR from FreePBX™. This process involves a few simple steps:

1. In a browser, enter the address of your free PBX installation. Once you reach the page, you will see the FreePBX™ dashboard, as shown in figure 6-1.

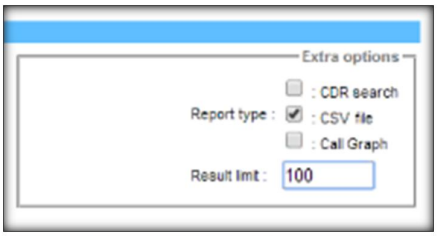
6-1 The FreePBX™ dashboard

2. In the Reports drop-down list, select CDR Reports. The reports page will open, as shown in figure 6-2.



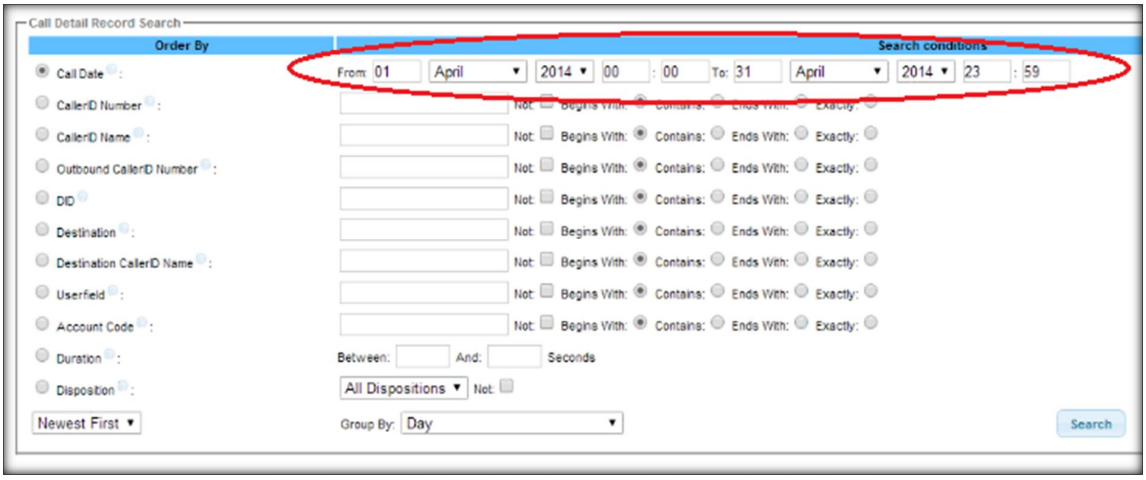
6-2 The CDR Reports page

3. In the Extra options box in the upper right corner, uncheck CDR search, then check CSV file. This step lets you export the CDR into a comma separated value (CSV) file, the format needed for FreeRATE.



6-3 Selecting a CSV file for the output format

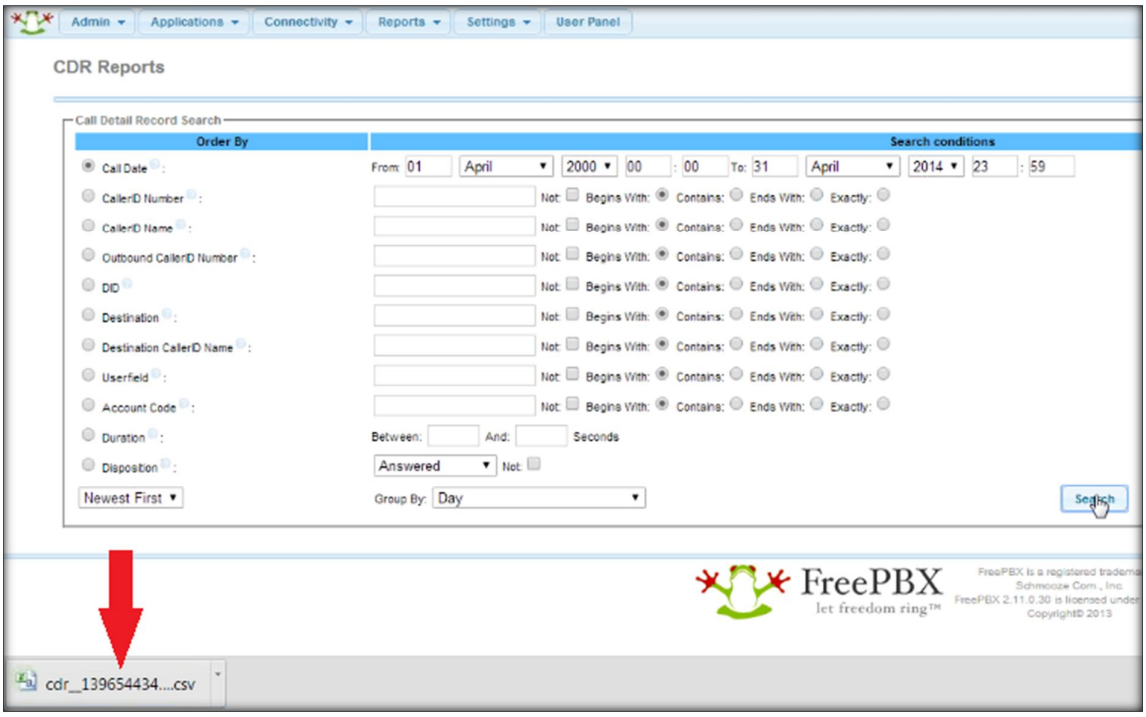
4. Still in the Extra options box, set the maximum value in the Result limit field to 999,999,999, in order not to lose any CDRs.
5. In the main part of the CDR Reports page, specify a date range in the fields at the top, in the Call Date line, as shown in figure 6-4. The time window typically spans one month.



6-4 Fields in FreePBX™ used to specify a date range for the CDR

6. Near the bottom of the screen, in the All Disposition drop-down list, choose Answered Calls. This selection eliminates unanswered calls from the CDR, letting you bill customers for completed calls only.

7. Press the Search button. The system will compile the CDR. This process typically takes from a few seconds to a few minutes, depending on the call volume in the given date range. Once complete, the system will download this information into a CSV file, visible in the bottom left corner of the screen, as shown in figure 6-5.



6-5 The CSV file containing the CDR

8. Save this file to use when importing your CDR into FreeRATE, as described in step 5 of section 2.

7 Configuring FreeSWITCH

FreeSWITCH is a service that offers an open source platform at freeswitch.org. You can use this service to generate CDRs in a format suitable for importing into FreeRATE.

In order to produce invoices for calls routed on FreeSWITCH, you first need to export a CDR from the service. However, FreeSWITCH does not supply a pre-defined format for CDRs. Instead, it provides a module called Mod cdr csv, available at http://wiki.freeswitch.org/wiki/Mod_cdr_csv, that documents how to configure CDRs. Follow these steps to obtain CDRs in the generic CSV format FreeRATE requires:

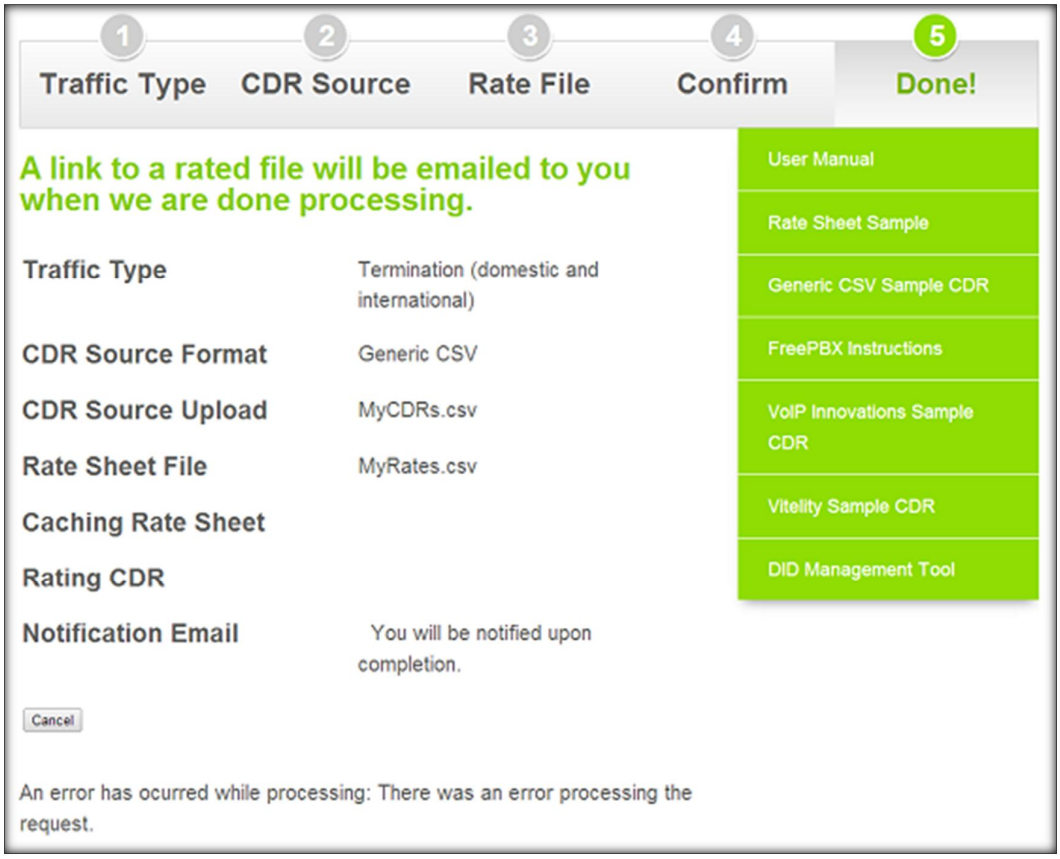
1. Open the configuration file iconf/autoload_configs/cdr_csv.conf.xml.
2. Adjust the settings to use the following values:
    - `set <param name="legs" value="b"/>`
    - `set <param name = "master-file-only" value = "false"/> if you want 1 CSV per account code. Otherwise, set the value to "true."`
    - `In <settings> <param name="default-template" value="freerate"/>`
    - `In <templates> <template name="freerate">"${bleg_uuid}","${caller_id_number }","${destination_number}","${destination_number}","${answer_stamp }","${billsec}"</template>`

Once you perform these modifications to the configuration, FreeSWITCH will save CDRs in the generic CSV format required by FreeRATE. You can then import FreeSWITCH CDRs into FreeRATE, as described in step 5 of section 2.

8 Troubleshooting Errors

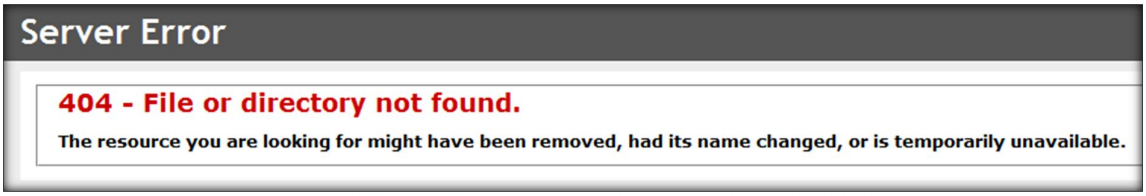
Problems can arise when you interact with FreeRATE, and when source files contain errors. If you experience difficulties, refer to the following scenarios and corresponding troubleshooting tips:

- **Low success rate**: FreeRATE could not locate rates in your rate sheet for a significant number of CDRs in your source file. Check your rate sheet for missing information.
- **Processing error:** If either the CDR file or the rate sheet contain invalid data, FreeRATE will report a processing error. Check the files for proper format, as explained in section 5.



8-1 A processing error due to improperly formatted source files

- **File not found:** FreeRATE stores your rating results and your source file for 24 hours. If you try to access the files after this time has passed, you will see an error message. Rerate the CDRs and download the results within a day.


Server Error
404 - File or directory not found.
The resource you are looking for might have been removed, had its name changed, or is temporarily unavailable.

8-2 The error message resulting from trying to access an expired link

- **Long running time:** The rating process can take from a few seconds to a few minutes to run, depending on the size of the files uploaded. A CDR file with 100,000 records

typically runs for a few minutes. If the process is taking a long time to run, check for one of the following situations:

- Your CDR source file has a large volume of records: Give the process ample time to complete.
- Your Internet connection is down: Ask IT personnel to check the network.